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This extensively annotated bibliography lists documents in the ERIC system dealing specifically with individual instruction for disadvantaged students. They are organized by instructional level, and within these sections reports dealing specifically with reading and language arts are listed separately. There is also a section of guidelines for program development and general discussions of individual instruction. Many of the documents report programs and research projects. (EF)

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Number 2, January 1969

A SELECTED ERIC BIBLIOGRAPHY

on

INDIVIDUALIZING INSTRUCTION

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UD 007 772

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January 1969

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INTRODUCTION

This bibliography was designed to acquaint researchers, practitioners, and others with those documents which have been submitted to the ERIC system and have appeared in Research in Education relating to individualizing instruction for disadvantaged students. The bibliography covers selected documents from the first ERIC collection through the Research in Education of November 1968. Some of the documents are more general, but the implications of their contents have strong relevance to the education of urban children and youth.

The ERIC Information Retrieval Center on the Disadvantaged has prepared this bibliography because of a growing awareness from the literature that it is only through a restructuring of instructional methods toward individualization that children can be helped to learn more efficiently. This objective, more than an emphasis on specific content to be absorbed, is essential if our young people will be helped to face and find satisfactory solutions to innumerable problems. In addition, the Coleman report and subsequent documents have emphasized the urgent need for individuals to sense that their own decisions and actions have a direct relationship with their present and future. Critics of present day education suggest that the teacher-directed self-contained classroom teaches young people to do what they are told to do, when they are told to do it, and how. The contract method developed in the earlier part of this century in the privileged private and suburban schools provided students with opportunities for inquiry and creative organization of information. The several current approaches to individualizing instruction are further refining this technique. Almost without exception, the documents in this collection reporting on field studies or formal research give evidence of the promise of these techniques with poor and minority group children.

This bibliography has been organized by instructional level, and within those groups where a large number of documents were available, those reports dealing specifically with reading and language arts to the exclusion of other curriculum areas have been placed in a separate category.

LEGEND

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GUIDELINES

Babcock, Chester D. The urgency for individualizing instruction. 1967. 12p. E ED 017 978 / MF-$0.25 HC-$0.56 /

This paper examines the rationale for greater individualization of instruction and considers means of achieving that goal. The author recommends that administrators (1) re-examine their own concept of the central purpose of education, (2) redefine their definition of achievement, (3) group students only in terms of achievement in a particular discipline, (4) recognize that the self-concept is a major factor in motivation and achievement, (5) make available to students a variety of learning resources, and (6) provide students with the time and opportunity to think for themselves.

Bratten, Jack E. The organization of interrelated individual progress and ability level courses in mathematics at Garber High School: descriptive analysis. Santa Monica, California: System Development Corporation, 1966. 20p. E ED 010 575 / MF-$0.25 HC-$0.80 /

The objectives, procedures, and use of resources that characterize the mathematics department at the Garber High School at Essexville, Michigan, were described in the second of a series of three reports. The major objectives were (1) to provide alternate versions of the fundamental substantive areas to accommodate several levels of student ability, (2) to provide students with the means to progress through substantive material as individuals, independently from each other, and (3) to provide a curriculum from mathematical concepts whose relationship within the department and with other departments is understood. The procedures employed included--(1) setting student expectancies, (2) teaching concept mastery, (3) helping students by instructional assistance, (4) using study guides, (5) grouping students, and (6) switching between courses. The functional space areas included--(1) classrooms, (2) department office space, (3) learning resources area, and (4) testing area. Media used in the department and personnel roles were also described.

Bratten, Jack E. The organization of interrelated individual progress and ability level courses in mathematics at Garber High School: system analysis and simulation. Santa Monica, California: System Development Corporation, 1966. 30p. E ED 010 576 [MF-$0.25 HC-$1.20]

A model of the mathematics department at the Garber High School at Essexville, Michigan, as a system for processing students was described in the last of a series of three reports. The results obtained through simulating the system on a computer were also reported. A feature of the plan was noted to be its flexibility in providing a unique program of courses to meet the varied abilities and interests of individual students. Descriptions were given of (1) a model of courses in mathematics showing the interrelationships among 29 courses offered by the department and the pathways by which the students may proceed, (2) results of a computer simulation of student behavior as they are processed and to predict the use to be made of the various courses when the department becomes fully operational, (3) implications for the overall project, and (4) the value of systems analysis and computer simulation in the study. Charts and tables were included.

Esbensen, Thorwald. Individualizing the instructional program. Minnesota: Duluth Public Schools, 1966. 40p. E ED 016 003 [MF-$0.25 HC-$1.68]

As stressed and illustrated throughout the discussion, an individualized learning program or assignment must include objectives which are expressed in terms of specifically observable behavior. These objectives fall within four categories of intellectual tasks--knowledge, comprehension, application, and invention. To assess a student's achievement of a particular objective or task, the classroom teacher might use a "curriculum map," an example of which is inserted in this report. Individualizing instruction modifies the role of the teacher, and instead of confronting a group of students with a collection of facts, he engages each student in the actual process of acquiring and generating knowledge. Sample individualized assignments, with objectives expressed in terms of "criterion performance," are appended.

Glaser, Robert. The education of individuals. Pennsylvania: Learning Research and Development Center, University of Pittsburgh, 1966. 9p. E ED 014 785 [MF-$0.25 HC-$0.44]

Inertia and practical difficulties have prevented a variety of individualized education programs from achieving their goal of providing an opportunity for individuals at every level of ability to realize their potentials and to perform at their best. Effective individualized education should provide a system of individualized instruction which nurtures independent learning and a learning environment adapted to the needs of each student. Patterns of individualized instruction have varied from the relatively inflexible program where students are dropped as they reach their presumed levels of achievement, to track plans and individually tailored instructional treatments. Recommendations include--(1) redesigned grade level boundaries and time limits for subject matter coverage, (2) well-defined sequences of behaviorally defined objectives as study guides for individual students, (3) adequate evaluation of a student's progress through a curriculum sequence, (4) instructional materials appropriate for self-directed learning, (5) professional training of school personnel in student evaluation and guidance, and (6) use by teachers of student profiles, automation, and other special techniques to design individualized instructional programs.

Glaser, Robert. Objectives and evaluation: an individualized system. Pennsylvania: Learning Research and Development Center, University of Pittsburgh, 1967. 5p. E ED 015 844 [MF-$0.25 HC-$0.28]

The most important factor in improving educational attainment is the analysis and specification of educational objectives and learning outcomes. The definition of instructional objectives for the curriculum designer, teacher, and student serves as a guide for attaining goals. When information about student performance is the basis for curriculum design, student performance must be diagnosed beyond the measurement of student standing within a group. Work needs to be done in developing criterion-referenced tests in order to assess the outcomes of learning.

Goss, Dale; and Little, Elmo. A profile of the Seattle Public Schools' new Beacon Learning Center; a school proposed for the continuous educational progress of children in grades four through seven. Washington, Seattle Public Schools, 1967. 42p. E ED 015 227 [MF-$0.25 HC-$1.76]

This profile of the new Beacon Learning Center, an experimental school, describes the "Continuous Progress Concept," a plan to improve educational quality and racial balance, proposed here for the intermediate grades. Several neighborhood schools would provide the student population of this educational complex. The size of the center would make it possible to offer such specialized features as an individualized approach to students, shared equipment, extensive and diversified instructional services, operational economy, and more efficient staff utilization. To counteract impersonality and loss of identity, the center would have a decentralized organization, and students would belong to units which have their own core of teachers, space, and special services and resources. Described are the characteristics of the pupil population, the center's organizational structure, the community resources, some methods for evaluating pupil progress, and the transportation arrangements. One section deals with ability grouping and its relationship to achievement.

Heffernan, Helen. The diverse needs of the learners to be served. 1967. 22p. E ED 014 340 [MF-$0.25 HC-$0.96]

One of the goals of education is helping every learner achieve his individual potential. In directing effort toward this goal, educational leaders must identify and meet diverse needs in the following areas--(1) the maturity of the learner, (2) his physical and social environment, (3) his family background, (4) his physical condition, and (5) individual differences in ability, interest, aptitude, and aspiration. Children from homes of poverty, migrant children, and children whose parents speak another language present different kinds of educational challenges to the schools. The major responsibility is seen as the prevention of failure. This requires learning activities which are highly individualized, freedom from rigid grade standards, and a closer home school relationship.

Klausmeier, Herbert J.; and others. Project Models: a facilitative environment for increasing efficiency of pupil learning and for conducting educational research and development. Madison: University of Wisconsin, 1967. 39p. E ED 016 004 [MF-$0.25 HC-$1.64]

Project Models is a cooperative project of the University of Wisconsin R/D Center on Cognitive Learning, Local School Systems, and the State Education Department. The project's aim is to increase the efficiency of student learning and to facilitate research and development activities by reorganizing the structure of the elementary school into research and instruction units, which concentrate on reading and language arts, arithmetic, and science. These units, composed of a unit teacher specialist, certified teachers, teacher aides, and students, replace the traditional self-contained classrooms and redefine personnel roles and relationships. The paper specifically describes a prototypal building organization and instructional program and discusses the training of unit leaders and the roles of the building principal and team members. It also outlines the requirements and conditions for such a "facilitative environment."

Sturges, A.W.; and others. Individualizing instruction: a report of the fall drive-in conferences, UMSSP. Grand Forks: School of Education, University of North Dakota, 1966. 48p. E ED 011 797 [MF-$0.25 HC-$1.92]

This paper discusses the 12 areas of change in schools--multiple classes, team teaching, use of teachers' aides, shared services, modification of existing facilities, use of programed materials, flexible scheduling, use of special materials, inservice training, use of nongrading procedures, incorporation of recent technological developments, and employment of curricular changes. The nature of and the need for innovation in general are discussed, and examples of changes that have taken place in Minnesota schools are given.

University City School District, Mo. Envisioning a new kind of school: a plan for redesigning a total school program. 1966. 46p. E ED 012 196 / MF-$0.25 HC-$1.84 /

Because of groundwork accomplished in the comprehensive project for improvement in learning and other complementary factors, the school district of University City, Missouri, believes it is in the unique position of being able to completely revamp its educational structure, rather than renovating piecemeal the existing framework, as is commonly done. The creation of the new kind of school system would move forward simulteneously in four interrelated areas--curriculum development, supportive organizational development, evaluation methodology, and research communication. The philosophical goal of this new school would be to create an education program intended to aid students in becoming responsible, perceptive, self-directed, self-educated, and competent citizens in a society which we cannot now envision.

Western States Small Schools Project. Individualizing instruction in small schools. 1966. 36p. E ED 011 474 / MF-$0.25 HC-$1.44 /

This document discusses procedures and potentials for individual instructional programs in small rural schools. Four factors are seen to be operant in the individualization process. These are the instructor, the curriculum and supplementary materials, administrative practice, and physical facilities. New instructional procedures should be instituted with a concomitant redefinition of the role of the teacher. It is suggested that the curriculum be organized into a common curriculum to be taken by every student, an alternative curriculum to meet the needs of local economic situations, and an individual curriculum to provide opportunities for special skills and talents. Suggestions for administrative reorganization to provide for individual differences are included. Ideas for modification of existing facilities and construction of new physical structures are presented.

Cohen, S. Alan. Some conclusions about teaching reading to socially disadvantaged children and youth. 1966. 8p. E ED 012 720 / MF-$0.25 HC-$0.32 /

Based on "cold data," some conclusions about the problems of teaching reading to socially disadvantaged children are listed and briefly discussed. Among them are the following--(1) most of these children are retarded readers, but they learn to read in spite of, and prior to the solution of their psychological problems, (2) word attack skills including phonics should be part of the instruction in remedial reading programs for these children, (3) because they tend to be visual rather than auditory readers, they should be given linguistic-phonic instruction as early as beginning reading programs, (4) because these children have different learning styles, the content, level, and rate of their learning should be adjusted to meet their individual needs, and (5) teachers do not know about new and appropriate materials and methods for teaching these children.

Newman, Robert E. The individualized approach to reading instruction: key concepts. 1967. 16p. E ED 017 396 / MF-$0.25 HC-$0.72 /

A detailed outline of key individualized reading principles and guidelines for their application to suburban and inner-city situations are presented. The approach is suggested for graded, team-taught, or self-contained classroom groupings in the total elementary reading curriculum. Two interdependent principles recommend that the child be helped to be on his own to develop at his own pace toward skillful and independent learning and thinking and that there be a two-way instructional relationship between teacher and pupil. Ten guidelines are offered for implementing these principles during the dependent phase, the early independent phase, and the independent phase during which the child learns to think reflectively. A detailed account of "The Riverview School Story" is related as an example of the application of the principles presented.

Wilson, Richard C. Using individualized reading as a diagnostic technique. 1968. 7p. E ED 020 079 / MF-$0.25 HC-$0.26 /

The identification and rectification of personal reading needs through individualized reading procedures are discussed. The shift of corrective reading from group to individual needs is urged. Remediation should begin with topics agreeable and enjoyable to the learner. Through pupil conferences and an informal reading inventory using this type of material, remediation and skill growth can be directed and motivated toward personal satisfaction. Continual diagnosis of needs is dependent on detailed anecdotal records concerning pupil interests, free reading, and a skill building profile. Sharing the findings with each child, his parents, and other professional staff members is recommended as a possible aid to healthy improvement of skills and sympathetic understanding of disabilities. References are listed.

Coffman, Alice O.; and Dunlap, James M. The effects of assessment and personalized programming on subsequent intellectual development of prekindergarten and kindergarten children. Missouri: University City School District, 1967. 104p. E ED 013 663 / MF-$0.50 HC-$4.24 /

The objective for this study was to foster prekindergarten children's development through a personalized program based on assessments of each child's developmental skills, using new tests and instructional materials adapted to individual needs. Of four experimental classes, three focused on an area of weakness (motor, auditory-language, or visual) for 20 minutes daily, within a framework of a nursery school program. Children with no weakness in these areas were placed in the fourth group which focused on cognitive skill development. Pre-test and post-test data and growth differences among the four experimental classes, the combined experimental groups, and control groups with and control groups without nursery school experience. The data were analyzed separately for girls and boys. Significant gains resulted from programs given to help overcome weaknesses in the experimental children. The experimental group grew significantly in more skills development areas than did the control group. They also grew significantly in skill areas not specifically programed. The control children with previous nursery school experience gained in more skills development areas than those children without school experience. In general, girls seemed to benefit more than boys from nursery school experience.

Daniel, Kathryn Barchard; and Cowles, Milly. The effects of individualized instruction on Head Start pupils' achievement. 1968. 4p. E ED 018 334 / MF-$0.25 HC-$0.24 /

Fourteen students at the University of South Carolina, most of them experienced teachers, enrolled in an experimental training program in early childhood education attempting to determine whether or not short periods of individualized training over a period of 5 weeks would be reflected in pupils' readiness as measured by the Metropolitan Readiness Test. Fourteen Head Start

classes were assigned randomly to the experimental teacher-students and fourteen Head Start classes to the control teacher-students. One male and one female were selected randomly from each of the experimental and control classes. On Form A, the pretest, the T-ratio approached significance at the ten percent level of confidence. Data showed that pupils who received special instruction gained during the pre- to post-testing periods and that most pupils in the control group either lost or remained at about the same level. The study recommended that a similar experiment be conducted for various time periods. It is recommended that teachers learn more about diagnosing pupils' instructional levels and about strategies for appropriate treatments.

PRIMARY GRADES

Duluth Special School District Number 3, Minnesota. Project follow through: an individualized instructional program; a proposal. 1967. 61p. E ED 017 589 / MF-$0.50 HC-$2.52 /

This proposal outlines plans for an individualized instructional program for approximately 100 Project Head Start graduates. In each of three target area schools a "kindergarten primary laboratory room" will be established where the techniques of student pacing, exploration, and self-selection will be employed. Seven professional staff, eleven paraprofessionals, and various volunteers will cooperate in a team teaching effort. To increase staff competencies, the program will offer inservice and preservice training. Social and cultural activities and health, psychological, and social services will be provided for the children and their families. Mothers of the Head Start graduates will participate in weekly group discussions on parent-child relations. Intelligence and achievement tests and a social maturity scale will be used to evaluate pupil progress, and changes in teachers' attitudes will be made available for research on the effects of the parent discussion program on parental attitudes and on the intellectual-social development of the children. An existing "follow-through" program is briefly described.

Goldman, Evelyn. Development of an individualized reading program for the second grade. 1967. 23p. E ED 020 077 / MF-$0.25 HC-$1.00 /

This report on the development, implementation, and evaluation of an individualized reading program at Northampton Elementary School during the school year 1966 to 1967, part of the Boston-Northampton Comprehensive Language Arts Program, a Title III ESEA project, provides a guide for establishing an individualized reading program in the classroom. Built around the experiences of a second-grade teacher, the report describes how the teacher and the children were prepared for the program, how the program was integrated with the total reading program, and how desired goals were achieved. Evaluation was done through pupil book reports, pupil-teacher conferences, interest inventories, reading

tests, and reading skills checklists. Each child's progress was recorded in his own reading record and the teacher's record for each child. At the end of the school year, it was concluded that all the desired goals were achieved since there was a general growth in comprehension skills and positive attitudes toward books and reading. Samples of the evaluation forms used are shown in the appendix.

Hunt, Lyman C. A grouping plan capitalizing on the individualized reading approach. 1967. 18p. E ED 012 227 / MF-$0.25 HC-$0.72 /

A variety of arrangements, activities, and grouping possibilities within the classroom using the individualized reading program (IRP) are presented. Several misconceptions about the individualized reading program are mentioned, especially the notion that class subgroups are not permissible within the IRP structure and that the teacher-pupil conference is the only kind of interaction between teacher and pupil in this method of instruction. It is stressed that classroom organization must facilitate teaching and be flexible, and that quiet, independent work habits must be taught. The following possibilities for classroom organization are discussed--(1) teacher to total class which includes class conference following silent reading time and book sharing by one pupil with total class, (2) subgrouping within the total class according to reading levels, activities, particular skills to be taught, or types of books read, and (3) the teacher-pupil conference.

MacDonald, James B.; and others. An experimental study of the group versus the one-to-one instructional relationship in first grade basal reading programs. Madison: School of Education, University of Wisconsin, 1966. 55p. E ED 010 330 / MF-$0.25 HC-$2.20 /

The relationship of two patterns of instruction to various aspects of beginning reading instruction was studied. These aspects included (1) reading achievement, (2) school-related attitudes, (3) socio-

metric choices, (4) school-related anxiety, and (5) teacher awareness. The ten experimental and ten control groups were pretested with the Metropolitan Readiness and Pintner-Cunningham tests. The experimental treatment consisted of the use of the one-to-one procedure while the control group used the traditional basal reading three-group procedure. Results of the study indicated that no significant differences existed between the two groups in reading achievement, pupil school-related anxiety, or teacher knowledge of pupil achievement. Significant differences favoring the experimental group were found on measures of pupil attitude toward reading and on the pattern of pupil friendship choices.

Sands, Theodore; and Hicklin, Charles R. The development and testing of instructional materials for gifted primary pupils. Final report. Normal: Illinois State University, 1965. 69p. E ED 010 766 [MF-$0.50 HC-$2.76]

Self-instructional science materials for gifted primary students were developed and used with first- and second-grade students. Units on atomic structure, the nature of molecules, measurement, and mathematics were developed, used, evaluated, and revised over a two-year period. Lessons were presented through the use of tape players, illustrative materials, and workbooks. Students were selected on the basis of ten scores and assigned to two groups. Each group used the materials for one-half of the experimental period. All students were pretested, tested at the end of the fourth week, and post-tested for achievement with instruments developed for the study. Other data were obtained from teacher evaluation forms and questionnaires completed by teachers and parents. Analysis of covariance was used to compare pretest and post-test scores of students in the two groups. Nonparametric techniques were used to check score distributions for groups with nonsignificant F values. Significant gains, at the .05 level, were obtained for the units concerned with mathematics, atoms, and measurement. A majority of the parents favored the use of the materials and indicated that the children developed interest through their studies.

Sartain, Harry W. Individualized reading: conclusions based on research reports. 1967. 15p. E ED 013 181 / MF-$0.25 HC-$0.68 /

Conclusions about individualized reading based on informal and controlled studies are presented. Research indicates that there are no homogeneous classes, although various grouping plans have attempted to narrow the range of individual differences. Informal studies by some teachers who have tried individualized reading in their classrooms reflect enthusiasm for the method. Three controlled studies show that there is no justification for urging all first-grade teachers to adopt the method. Related studies not involving first-grade children investigated the effect of an individualized program on the culturally depriced and the highly anxious child. In some cases, teacher knowledge does not justify an individualized approach. Recommendations are as follows--(1) Children profit if informal instruction such as stories which the children have dictated are used. (2) Formal reading instruction should include a variety of approaches. (3) There should be an extensive classroom library. (4) The teacher should often refer to lists of basic skills needed by children. (5) Evaluation should be continuous. (6) A teacher who feels incompetent using this approach should follow other practices. A 63-item bibliography is included.

Spencer, Doris U.; Moquin, L. Doris. Individualized reading versus a basal reader program at first grade level, in rural communities. Vermont: Johnson State College, 1965. 70p. E ED 003 486 / MF-$0.50 HC-$2.80 /

This study compared the effectiveness of a standard basal reading program with an individualized reading program which incorporated (1) a program of phonetic skills, (2) word recognition, (3) comprehension skills, and (4) a program of story reading. Twelve combination first- and second-grade individualized reading classes were paired with twelve basal reading classes in rural areas and pre- and post-tested. The final test comparisons were based on (1) word recognition, (2) phonetic ability, (3) comprehension rate, and (4) spelling. The analysis of variance for the post measures showed the individualized method on all subtests except rate of reading. The favorable results indicated the desirability of an individualized reading program at the first-grade level.

Spencer, Doris U.; and Moquin, L. Doris. Individualized reading versus a basal reader program in rural communities, a second year--grades one and two. Vermont: Johnson State College, 1966? 105p. E ED 012 686 [MF-$0.50 HC-$4.20]

The effectiveness of the individualized reading program of Co-operative Research Project-2673 was evaluated. The study repeated the program in many of the original classes and extended the method to new first-grade classes. The achievement of these classes was compared with that of first grades taught by the basal reader method. The study continued the individualized method through second grade for those pupils who had received instruction by this method in the first-grade study. The achievement of these classes was compared with that of second-grade classes taught by the basal reader program. New teachers attended a preschool workshop. For the test period of 140 days, the individualized program used the speech-to-print-phonics program while the basal program utilized the Scott-Foresman series. Pre-, medial-, and post-tests were administered to the first and second graders. A multivariate analysis of covariance was used to analyze the data. First graders with preschool experience performed better than those with no preschool experience in readiness skills. The preinstructional achievement of the individualized second-grade classes was superior to that of the basal classes. Sex differences were found on some of post-test measures. The individualized second-grade groups scored significantly higher on all post-test measures, except on two arithmetic tests.

ELEMENTARY LEVEL

Campbell, Vincent N.; Bivens, Lyle W. Self-direction in programed geography instruction. Pittsburgh: American Institute for Research in Behavioral Sciences, 1963. 24p. E ED 014 915 [MF-$0.25 HC-$1.04]

As part of a project to improve programed instruction by giving the student more freedom of choice and responsibility for learning, this field-type experiment exposed 178 students in seven grade five and six classes to linear (L), and self-directed (SD) programs, and no-program (NP) instruction in geography. (Self-direction allows the student maximum freedom in sequence, extent, and method of study.) Also varied in the design was a list of premotivating questions given two classes before they began the programs. Students in both L and SD groups reported little difference in actual study procedures, thus explaining the two programs on the criterion achievement test, and in mean study time. The premotivating questions had a negative effect, and teachers reported a need for more variety in study activity, in reference to the NP group. The authors point out that giving students freedom to use programed materials in any way they pleased did not detract from learning.

Glaser, Robert. The program for individually prescribed instruction. Pennsylvania: Learning Research and Development Center, University of Pittsburgh, 1966. 17p. E ED 010 519 [MF-$0.25 HC-$0.68]

Progress during the first year of the Oakleaf Project, an individualized instructional program for elementary school students, was summarized in this interim report. The Oakland Elementary School in suburban Pittsburgh was used as the project laboratory for producing a curriculum in an educational environment which would be responsive to individual differences among children. Subject-matter learning was concentrated on mathematics, reading, and primary-grade science. Self-study materials and diagnostic tests were developed and built into the individualized curriculum. Teachers were responsible for writing prescriptions of learning experiences required for fulfilling each student's individual needs. Tables in the concluding section of the report provide individual student progress data during the project's first year.

Lindvall, C.M.; and Bolvin, John. The project for individually prescribed instruction. The Oakleaf Project. Pennsylvania: Learning Research and Development Center, University of Pittsburgh, 1966. 19p. E ED 010 522 [MF-$0.25 HC-$0.76]

The Oakleaf Project was a cooperative study of the problems involved in making provision for individual differences within the context of regular school operations. The Oakleaf Elementary School in suburban Pittsburgh was used as a laboratory for the development and trial of a program for individually prescribed instruction (IPI). The IPI procedure consisted of analyses of pupil progress at certain sequential steps in learning and the development of personal prescriptions to specify the learning experiences required to meet the individual needs of each student. Students participated in the IPI program for less than one-half hour each school day. During the rest of the day, the students engaged in study in the conventional manner. Three basic content areas were used with the program--reading, mathematics, and science. At the time of this report, the study effort was still in progress and no conclusions were presented. Possible research studies to be undertaken in the future as part of this continuing project were outlined.

Lindvall, C.M.; and Yeager, John L. An exploratory investigation of selected measures of rate of learning. Pennsylvania: Learning Research and Development Center, University of Pittsburgh, 1965. 13p. E ED 010 520 [MF-$0.25 HC-$0.52]

Three measures of learning rate were explored--(1) number of units completed per year, (2) time to complete given units, and (3) amount of content mastered per day. The supposition was that these measures could be used to provide estimates of individual progress in the elementary classroom environment. Only one of these measures (amount of content mastered per day) showed minor degrees of consistency over different units of instruction, and findings of the study suggested that learning rate was not a general characteristic of the learner. It was tentatively concluded that rate of learning is specific to the learning task and is not a general parameter that applies to all learning factors.

Lipson, Joseph I.; and others. The development of an elementary school mathematics curriculum for individualized instruction. Pennsylvania: Learning Research and Development Center, University of Pittsburgh, 1966. 29p. E ED 013 120 [MF-$0.25 HC-$1.24]

Individually prescribed instruction (IPI), designed for grades 1-6, is a sequential mathematics curriculum in which each objective is a description of something a student should be able to do. Each objective is a prerequisite to the learning of a later objective. Students are tested for mastery of objectives and then placed so that they are studying something not yet learned but something for which they have all the prerequisites. Considerations which shaped the sequence of objectives discussed are (1) the commitment to the new mathematics, (2) the need of individualized instruction upon curriculum preparation, (4) subject matter accuracy and logical progression, (5) the use of memorization and mastery in the math curriculum, (6) learning theory and educational experiments, (7) testing requirements, (8) interaction between lesson writers and the new curriculum, (9) the effect of a device (a language master) for communicating with non-readers. Some children may not be able to learn as well by individualized instruction as in a conventional classroom. One-day-a-week, class activities in a mathematics seminar was the approach used to offset this potential problem. Achievement results for the school year 1964-1965 show wide ranges of achievement for individual pupils. The first grade class seems to have made double the normally expected growth. A suggestion that has many potentials is the use of computer assisted instruction with individualized instruction.

Morningstar, Ned. The Aspen continuous progress plan. Denver: Colorado State Department of Education, 1965. 33p. E ED 011 788 [MF-$0.25 HC-$1.32]

This report is a documentation of the efforts of the staff of the Aspen Elementary School to individualize the instructional program in grades K-6. Involved in this were approximately 450 students and a staff of thirteen teachers. The individualization of instruction was accomplished through the modification of the teaching-learning process and the use of programed materials. Activities were concentrated in the areas of mathematics and reading and to a lesser extent in science. Each teacher was

responsible for presenting materials to suit each member of her class regardless of the level at which the student was performing. Summaries are presented of the teachers' and parents' reactions, evaluation of the program, areas needing improvement, student achievement, and recommendations.

Scanlon, Robert G. Factors associated with a program for encouraging self-initiated activities by fifth and sixth grade students in a selected elementary school emphasizing individualized instruction. Pennsylvania: School of Education, University of Pittsburgh, 1966. 99p. E ED 015 785 [MF-$0.50 HC-$4.04]

Recent research on individualized instruction and its effect on self-initiated learning behavior suggests that a classroom atmosphere of guided self-development and an educational system adaptable to individual differences are most effective in promoting the growth of the pupil's full talents, creativity, and interest. This study attempted an analysis of the relationship between individualized instruction and self-initiation. During a four-month period, 28 fifth grade pupils and 22 sixth grade pupils received three experimental treatments intended to encourage self-initiated learning behavior. These included--(1) development of a mathematics material center by the children, (2) selection of optional work in mathematics, and (3) reinforcement of pupils by the teacher during mathematics class. The three treatments were introduced in a staggered order, not all at one time. Students were observed during mathematics, science, and social studies classes but only the mathematics class had an individualized instruction orientation. Measuring instruments were designed to quantify pupil behavior. Nine hypotheses were tested. Four were rejected, five were not. The results indicated that more self-initiated behavior was encouraged by the individualized mathematics class than by the teacher-dominated science and social studies classes. The general finding was that a highly individualized classroom environment encourages self-initiated learning behavior.

Stutz, Rowan C. Promising practices for small schools improvement. Annual progress report. Western States Small Schools Project, 1965. 110p. E ED 020 065 [MF-$0.50 HC-$4.48]

Meeting the unique problems of providing quality education in small schools calls for special programs. The Western States Small Schools Project has compiled nine promising program practices which capitalize upon the potential strengths inherent in smallness--individualized instruction in high school language arts, individualized English in a small high school, individualized instruction in a small elementary school, individualized and non-grade math in a small high school, modern mathematics in an individualized program, and expanding mathematics study opportunities in small high schools. Each practice is described by the participating school, with an account of the desired outcomes, preparation, practice, and evaluation.

Tibbett, John H.; and Facklam, James. "Project Learning Power," a Title I ESEA project of Thornton Fractional Area Educational Cooperative, 1967. 115p. E ED 018 501 [MF-$0.50 HC-$4.68]

An attempt to offer more than a remedial program to underachievers, this project was a six-week summer session devoted to teaching basic reading and mathematics concepts in an individualized learning setting. Emphasis was on culture and the community, but physical education and recreation were also included. Undue conflict, competition, and pressure were avoided in dealing with the children. The instructional program was designed by team teachers, a central planning committee, and subject matter specialists. Prior to the summer session there was a workshop series in mathematics and reading, where innovative ideas were encouraged. One innovation was the employment of teachers who collected materials and conducted an evaluation. Descriptions of the program's philosophy, content, evaluation, and procedures are included.

ELEMENTARY LEVEL - Reading and Language Arts

Allred, Ruela; and others. Three studies in elementary spelling instruction. Provo, Utah: Brigham Young University, 1964. 98p. E ED 014 473 [MF-$0.50 HC-$4.00]

Three studies undertaken at Brigham Young University attempted to assess the relative efficiency of the university's individualized approach and a whole-class approach to teaching spelling in the elementary grades. The first-year study utilized these two approaches in grades two through six. The second-year project continued the use of these methods in the second and third grades, but utilized four methods in grades four through six by using, in some classes, the Science Research Associates' Spelling Laboratory in combination with each of the original methods. The third was a longitudinal study based upon data from the other two. The individualized method proved to be responsible for at least as much spelling growth as the whole-class method. However, primary students of low reading ability appeared to benefit more from the whole-class approach. Systematic, individualized instruction in spelling principles was found to be valuable in the fourth and fifth grades with students of medium or low reading ability. That the longitudinal study identified more significant differences between the methods tested than did either of the other studies indicates the value of using a method at least two years before judging its efficiency.

Gasper, Karen; and others. The teaching of individualized reading in the Madison public schools, grade three-six. Wisconsin: Madison Public Schools, 1965. 83p. E ED 013 191 [MF-$0.50 HC-$3.40]

A service bulletin prepared by a committee of teachers in Madison, Wisconsin, about the teaching of individualized reading in grades three to six is presented. The Madison philosophy of individualized reading is given. Suggestions for reading materials, for organizing a classroom, and for record keeping are provided. An annotated bibliography of children's books and records, a bibliography of professional literature, and an index are included.

Nichols, Marguerite; and others. Individualized reading program for elementary grades. Denver: Colorado Western States Small Schools Project, 1964. 46p. E ED 011 499 / MF-$0.25 HC-$1.84 /

An individualized reading program for grades two, four, and five was initiated at Plateau Valley School in Collbran, Colorado, in an effort to raise the achievement level of culturally disadvantaged youth in rural areas. The program at each grade level is described in terms of the methods used to gather preliminary data, in the selection and use of materials, in planning and conducting class activities, in trying new methods and techniques, and in evaluating the results. Examples of pupil reading record books, tests, reading inventories, reading profiles, class-sharing ideas, questions used with independent reading, and book review forms are described. The program was evaluated on the basis of (1) student achievement, (2) teacher changes in methods of teaching and attitude toward job and interest of nonproject teachers, and (3) effects on school and community as indicated by changes in school operations and community involvement, acceptance, and interests.

Northrop, Margery V. Individualized language arts, why not. 1967. 7p. E ED 015 189 / MF-$0.25 HC-$0.36 /

The language arts program in an elementary school classroom can be individualized by any teacher whose pupils have acquired certain basic skills in reading and writing. Working within one large block of time daily, the language arts teacher first ensures the provision of worthwhile independent activities which will stimulate the children's interest and free him to give individual and small group instruction. The children then accomplish spelling, composition, and similarly related assignments at their own rates and levels. Through individual conferences with students, the teacher forms fluid groups of students with similar deficiencies and teaches accordingly, disbanding the groups when the skills are attained. In the individualized reading program, children select their own books, read at their own pace, keep their own records, and share their reading with classmates through a variety of activities. These sharing activities lead into individualizing a balanced program of oral and writing skills for both practical and personal needs.

Oba, Betty. The individualization of the teaching of spelling in the elementary school. Denver: Colorado State Department of Education, 1964. 17p. E ED 011 790 / MF-$0.25 HC-$0.68 /

This report is a documentation of the individualization of the teaching of spelling in the elementary school program, grades two through six, at Meeker, Colorado. The program is oriented toward using tape recorders. The recorded materials are teacher-made, except for some commercial phonics material. Explanations are presented about the organization, procedure, evaluation, and problems encountered. Recommendations for improvement are made.

SECONDARY LEVEL

Bratten, Jack E. The organization of a course for individual progress at Theodore High School: system analysis and simulation. Santa Monica, California: System Development Corporation, 1966. 42p. E ED 010 567 [MF-$0.25 HC-$1.68]

The biology course was studied as a system for "processing" students and was simulated on a computer. An experimental version of the course was simulated and compared with the actual course. The purposes of this study were (1) to examine the concept of individual progress as it related to the organization of courses in general and the biology course in particular, (2) to draw implications from the results as they related to defining new roles for school personnel, providing information on the use of media as it affects interactions of students and teachers, describing new applications for data processing, providing information on amount and arrangement of space, and providing estimates of characteristics of graduating students, and (3) to draw conclusions about the use of systems analysis and computer simulation as research techniques. The use of systems analysis and simulation to study possible behaviors of an existing school organization was found to be feasible and valuable. Simulation of the operation of a theoretical organization provided predictions of the results to be expected from use of the planned organization. Data gathered from this study could be of possible value to course designers who desire a theoretical model to guide their efforts. Related reports are ED 010 565 and ED 010 566.

Bratten, Jack E. The organization of interrelated individual progress and ability level courses in mathematics at Garber High School: an introduction. Santa Monica, California: System Development Corporation, 1966. 18p. E ED 010 574 [MF-$0.25 HC-$0.72]

An analysis of a high school that has organized its resources to meet the educational needs of all of its students was described in the first of three reports. The Garber High School at Essexville, Michigan, was described as an organization which permitted the individual learner to move through as much subject

matter as he can master. Discussion was presented on (1) the community, (2) the school, its organization and objectives, and (3) the mathematics department. Included also were discussions of the school's use of media for individualization and its space and facilities. Some of the innovative procedures adopted by the school were (1) individualized instruction, (2) multiple levels of instruction within courses to accommodate seven levels of general ability, (3) nongraded program, (4) continuous progress of students, (5) flexible scheduling, and (6) mobility of students. Flow-charts, organizational structure, and tables were included. Related reports are ED 010 575 and ED 010 576.

Elkins, Keith; and Porter, Martha. Social science education consortium. Publication 114, classroom research on subgroup experiences in a U.S. history class. Lafayette, Indiana: Purdue University, 1966. 70p. E ED 014 002 [MF-$0.50 HC-$2.88]

An experiment to investigate the generation of new ideas as a result of subgroup participation was conducted with two U.S. history classes in grades seven through eight. Three ways of organizing class activity were used--individuals, subgroups, and full-class session. "Class A" was quieter, more deliberate, more stable, more dependent, and less able than "Class E" which was noisier, more impulsive, more volatile, and more competitive. Eight class periods were used for the study. A post-meeting reaction questionnaire was used to measure student satisfaction with classroom activities, and an idea questionnaire was used to trace the origin of students' ideas. Student and teacher verbal behavior was recorded on tape. The classes were started with individual effort based on reading a historical novel. Subgroup activity was followed by full-class discussion and further individual research. In "Class E" the production of ideas covaried with freedom of participation, but "Class A" produced more ideas under teacher control. Conclusions relate to the mode of class organization and to the characteristics of the individuals in the group. Reports of two other experiments are included in this paper. The first of these (also conducted with two prefreshman classes studying U.S. history) offered the preliminary conclusion that participation in subgroups tend to increase the student's confidence and satisfaction and to move him toward readiness. Another experiment examined the relationship between the characteristics of the student contributor in

a history class and the value of the contribution as perceived by classmates. This paper was written as part of the social science education consortium, a curriculum project designed to outline the concepts, methods, and structure of several of the social sciences for use by teachers and curriculum workers at all grade levels.

ES '70 news. Volume 1, no.1. New York: E.F. Shelly and Company, 1968. 8p. E ED 020 443 [MF-$0.25 HC-$0.40]

Now consisting of seventeen schools, the Educational System for the Seventies (ES '70) network was formed in May 1967 to devise and execute a program for developing a new comprehensive secondary school curriculum and organization which (1) provides an individualized education for each student, (2) is highly relevant to the adult roles which he will play, (3) is economically practical within available public resources, (4) is based on behavioral and related sciences, (5) employs suitable systems of school organization, (6) utilizes appropriate educationally oriented technology, (7) is locally planned and directed, (8) is nationally coordinated, (9) is financed by federal, state, and local funds, and (10) is designed for ultimate availability to all school systems. The role of the local school district is (1) generating educational policy, (2) establishing the validity of ES '70 proposals and products, (3) providing the force, implementation and demonstration, (4) providing information on which revisions and evaluations may be made, and (5) acting as a model for demonstration and dissemination of proven design and practice. The role of the states, elements of the program, and ES '70 information system, news from the network, and a report from Monroe, Michigan, on developing a high school facility as a model for other ES '70 network schools are included.

ES '70 news. Volume 1, no.2. New York: E.F. Shelly and Company, 1968. 8p. E ED 020 444 [MF-$0.25 HC-$0.40]

Specifics of implementing the objectives of the Educational System for the Seventies (ES '70) program to relate education to the needs of American youth. Clarifying the structure of the ES '70 network, and charting the broad direction of the long-range activities of the participants were the primary subjects for review at the second annual meeting of the ES '70 network in San Mateo, California, May 23 and 24, 1968. Superintendents of the seventeen participating local school districts reported to the 150 participants of their district activities for the year. The program also included (1) university speakers in the areas of curriculum development, research on role analysis of teachers, cost of effectiveness, and computer applications to student instruction and guidance, (2) a discussion of industry involvement, (3) a review of the New Orleans conference held in March, and (4) a reaction panel on the roles of the local school districts, the state educational departments, and of industry in relation to ES '70. Briefly reviewed are (1) the study of curriculum for occupational preparation and education (SCOPE) program at Rutgers, (2) the continuous curriculum in Nova Schools, Fort Lauderdale, Florida, (3) the Atlanta school system's work on a student-oriented secondary curriculum, and (4) the Triple T Project to encourage elementary and secondary schools and institutions of higher education to work together to improve the "Training of Teachers."

Hartenberger, Walter L. Developing an individualized instructional program. 1965. 8p. E ED 012 197 [MF-$0.25 HC-$0.32]

Individualization of instruction is a distinct advantage of a small, rural high school. Five factors operant in individualization are the direct goal-centered influences of the community, teacher preparation, the classroom environment, use of the physical plant, and optimal use of school funds. Specific instructional innovations are cited.

Holmes, Charles. An individual approach to the teaching of United States history. Denver: Colorado State Department of Education, 1964. 14p. E ED 011 794 [MF-$0.25 HC-$0.56]

This document explains the individual approach to the teaching of United States history to eighth graders at Meeker, Colorado. The program is structured so that after a student demonstrates mastery of a chapter through a short objective test, he then investigates enrichment materials such as filmstrips, tapes, records, books, and picture encyclopedias. A discussion is presented relating to the purposes, procedures, and results of the program. This is supplemented by conclusions and recommendations drawn from the program. The appendix contains a list of equipment and materials used.

Smith, Richard J.; and Klausmeier, Herbert J. The develcpment of a facilitative environment for learning and research through R/I units in the secondary school, 1966-1967. Madison: University of Wisconsin, 1967. 14p. E ED 016 005 [MF-$0.25 HC-$0.64]

This paper describes the introduction of the concept of the research and instruction unit in seven secondary schools in Wisconsin. The concept of the unit, originally developed in elementary schools as part of project models, is based on a reorganization of the traditional school structure and the introduction of new roles and relationships for school personnel. Each unit is composed of a leader specialist, certified teachers, noncertified aides, and students. The idea was developed by the University of Wisconsin Research and Development Center for Cognitive Learning which is studying the research and development aspects of these innovations. The objectives of this team teaching scheme are to develop systems of concept learning, individualization, and motivation. The application of the concept is flexible and the specific form it takes depends on the situation in a particular school. On the secondary school level this instructional innovation has been directed to the study of mathematics, science, English, social studies, and, in one school, physical education. The paper specifically describes how the units operate in some of the schools.

SECONDARY LEVEL - Reading and Language Arts

Appleby, Bruce C. Individualized reading in the literature program. Champaign, Illinois: National Council of Teachers of English, 1967. 8p. E ED 018 411 [MF-$0.25 HC-$0.40]

As one means of teaching literature, individualized reading has proven particularly effective in stimulating students to read on their own--as an experience rather than as an exercise. Individualized reading is a teacher-guided program in the reading of fiction which allows the student to choose what he reads over a continuous period of time. Individual conferences are held periodically to discuss the books the student has read and to check his progress. After only one year of such a course at the Keokuk, Iowa, senior high school, 85 percent of the incoming seniors requested to take it. With this impetus, a study was undertaken to determine what differences exist between students who take individualized reading and those who do not. Test 7 of the Iowa Tests of Educational Development (ITED) and the "inventory of satisfactions found in reading fiction" were administered to students in an individualized reading program, to students who wanted the program but weren't taking it, and to students in a required literature course. Each group contained 65 students at four different ability levels. In the inventory categories of relaxation, escape, and associational values, the individualized reading group was favored, but the differences were not statistically significant. In the category of information gained from fiction, the difference favored the individualized reading group and was significant at the .01 level. Results favorable to individualized reading were also significant in the area of self-development. When used in conjunction with other methods of teaching literature, individualized reading appears to increase students' enjoyment of, feeling for, and understanding of literature.

Borden, Charles; and Lloyd, Robert L. English in depth: a promising practice developed by the Wells High School. Carson City: Nevada Western States Small Schools Project, 1965. 35p. E ED 012 198 [MF-$0.25 HC-$1.40]

This report is a documentation of an individualized English program at Wells, Nevada, during the school years 1963-64 and 1964-65. Procedure, methods, objectives, lesson assignments, samples of students'work, student and parent evaluation of the program, and conclusions are presented in detail. A bibliography of instructional materials is included.

Jaquette, Charles. An individualized English program for high school freshmen and sophomores. Denver: Colorado State Department of Education, 1964. 11p. E ED 011 789 [MF-$0.25 HC-$0.44]

An individualized English program for high school freshmen and sophomores was established at Meeker, Colorado, during the 1963-64 school year. This report describes the activities, problems, successes, recommendations, evaluations, and conclusions of the program.

White, Christine M. Development in English at Horton Watkins High School, St. Louis, Missouri. St. Louis, Missouri: Horton Watkins High School, 1967. 14p. E ED 018 414 [MF-$0.25 HC-$0.64]

Innovation English at Horton Watkins High School, St. Louis, Missouri, is a modified flexible scheduling program designed to encourage high school students both to work independently and to share their reactions and ideas with others. Each of the approximetely 400 students participating in the program attends one large group instructional session (frequently taught by a team), two seminar discussions with a teacher and ten other students, and two independent study periods each week. During the latter periods, he may study independently, use the library, view a film strip, confer with a teacher to work out an individ-

ualized plan of study, or take an examination. Progress is facilitated by the use of student "work packages" which explain a unit's purpose and provide an outline and explanation of activities to be completed by the student. Freedom is given to teachers to create and structure their own courses, and to students to pursue their independent study, research, and creative projects. In addition to traditional courses, the curriculum includes (1) an American studies course which examines the relationships among literature, history, sociology, and literary criticism, (2) a creative writing course, and (3) a poetry course in which poetic techniques and devices are studied. An additional program outside innovation English is a tenth-grade individualized reading project, the Ladue experimental English program. Included is a sample work package on "Macbeth."